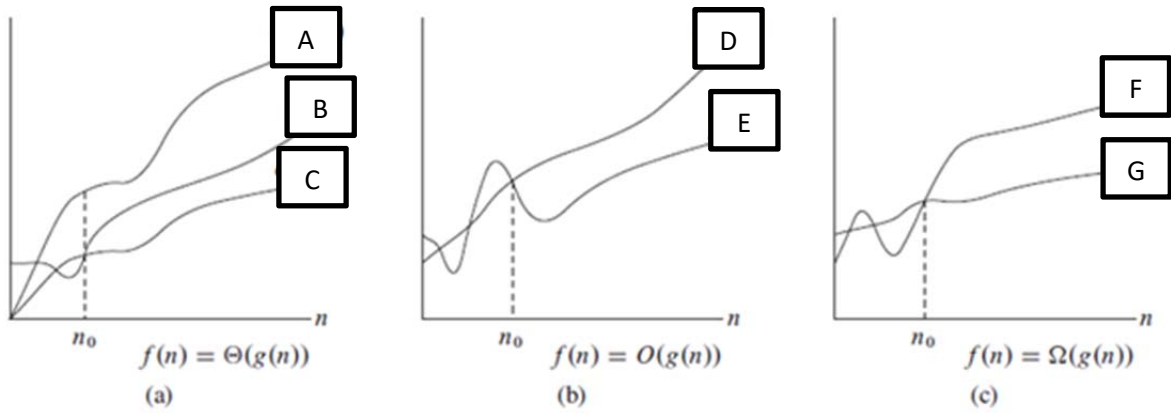


1.



$\Theta(g(n)) = \{f(n) : \text{there exist positive constants } c_1, c_2, \text{ and } n_0 \text{ such that } 0 \leq c_1g(n) \leq f(n) \leq c_2g(n) \text{ for all } n \geq n_0\} .^1$

$O(g(n)) = \{f(n) : \text{there exist positive constants } c \text{ and } n_0 \text{ such that } 0 \leq f(n) \leq cg(n) \text{ for all } n \geq n_0\} .$

$\Omega(g(n)) = \{f(n) : \text{there exist positive constants } c \text{ and } n_0 \text{ such that } 0 \leq cg(n) \leq f(n) \text{ for all } n \geq n_0\} .$

Fill in the blank with appropriate functions .

- A. _____ D. _____ F. _____
- B. _____ E. _____ G. _____
- C. _____

In Class Problems

3.1-2

Show that for any real constants a and b , where $b > 0$,

$$(n + a)^b = \Theta(n^b) .$$